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SUMMARY

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TECHNIQUES AND MATERIALS FOR THE PROVISION OF MASS LOW-COST HOUSING AND ASSOCIATED FACILITIES

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SUMMARY

For the general development of the less developed areas, utilization of the large potential of human resources is seen as a primary necessity. For this, good low-cost housing, and spaces and buildings for use in education, health services and recreation, are essential requirements in building up a stable, healthy and industrious community. The small amount of prestige housing being done in many parts of Africa, for instance, to accommodate people like government servants in some of the emerging middle-income groups, is only a minor contribution towards solving the problem. What is really required is the provision of mass, low-cost housing for the large numbers of families with very low incomes. In Africa the major problem arises from the rapid growth, during the past decade, of urban populations and from the state of general poverty - factors which have combined to create numerous large slum areas.

To achieve its purpose mass housing must provide for healthy and decent family living, and it should be so carried out that it will represent an asset for many years to come and not degenerate into slums in the future. Solutions to the many problems of planning and building good housing on a large scale at as low a cost as possible, necessitate a co-ordinated programme for housing on a national basis and factual information obtained by research and experiment.

Various aspects of research, and techniques used in planning and building low-cost houses, are discussed and illustrated with examples of successful approaches that have been evolved in some countries.

Studies of the country's natural resources are important, in order to find materials which could be used in building; as are investigations to develop the use of these raw materials for the manufacture of good quality durable building products. An interesting example quoted concerns work in South Africa which has led to the industrial production of slag cement from waste blast-furnace slags containing a high proportion of magnesia.

Soil mapping and soil investigations are considered important prerequisites for planning, because of the serious damage to buildings that can be caused by unstable soils such as heaving clays, collapsing soils and sink holes. Methods for identifying these soil types and for testing the engineering properties of soils, and foundation and building designs to suit certain unstable conditions have been developed through research.

Excellent techniques have been evolved for socio-economic surveys to establish trends in size and composition of families and in preferred living practices and the use of space. Surveys should be designed to include data on family incomes and patterns of expenditure, so that rent-paying ability can be assessed. It is recommended that persons who know both people and conditions intimately should be trained for this work.

The formulation of minimum standards of accommodation and minimum house plans, and the principles underlying economic planning of housing layouts and townships, are briefly discussed. The minimum standards of accommodation applied in South Africa are given.

It is suggested that standards to control the building of low-cost houses are best applied in the form of tests of minimum performance under the climatic conditions concerned, for structural stability and durability, resistance to rain and fire, and thermal performance. In this way new materials, or new methods of construction, can be readily assessed and taken into use.

Because the shortage of trained labour is a serious handicap in less developed areas, ways must be devised of using local labour as efficiently as possible. A system of controlled self-help for building houses is described, whereby local labour is rapidly trained while actually building the houses required and earning money for doing so.

Suggestions are made for overcoming problems connected with concrete blocks for walling. Other work described was aimed at developing roof paints with the desired durability, or at the use of short lengths of timber for building low-cost timber houses.

Mention is also made of developments in Africa in the design and use of stabilization ponds for waste water and sewage disposal for small towns.

It is finally recommended that many of the approaches and techniques outlined in the paper could be adopted with fruitful results in other less developed countries.

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